

27. The method as recited in claim 24, wherein different zones (I, II, III) of the processing area of the workpiece (20) are detected by means of the detector (11).

28. The method as recited in claim 27, wherein a first of the zones of the processing area comprises an interaction zone (22), a second of the zones encompassing the first zone, comprises a region of the melt (23), and a third of the zones comprises a whole processing area.

29. The method as recited in of claim 28, wherein sensing of the different zones (I to III) of the processing area takes place simultaneously.

30. The method as recited in claim 28, wherein the light radiation used for process monitoring is secondary radiation from the interaction zone (22) and used as reflected measuring light, is measuring light from regions of the processing area surrounding the interaction zone (22).

31. The method as recited in claim 29, wherein the sensing of the processing area as a whole is performed by means of the detector (11) with local resolution.

32. The method as recited in claim 31, wherein the detector (11) is provided with a selected one of linearly and areally arranged sensors.

33. The method as recited in claim 32, wherein all the sensors of the detector (11) read out for analysis observation windows of at least two sensors forming zones (I, II or III) of the processing area.

34. The method as recited in claim 33, wherein the observation windows are varied with respect to position and size on the basis of detector data, and analysis of results of optical measurements is suspended intermittently based on analytical data from the detector (11).

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35. A device for processing workpieces (20) by means of laser radiation (1), comprising a processing optic that focuses the radiation (1) onto a processing site (40) and that detects the light radiation emanating from a workpiece (20) for a detector (11) of a process monitoring system having a predefined optical axis, and comprising an external measuring-light source (32 to 34) whose measuring light, reflected from a processing area of the workpiece, is used to perform an optical measurement at the surface of the workpiece, wherein the measuring light can be detected by means of said processing optic.
36. The device as recited in claim 35, wherein the measuring light can be detected by means of said processing optic within a predefined optical axis (10) of the light radiation emanating from the workpiece (20).
37. The device as recited in claim 35, wherein the detector (11) is adapted for observing different zones (I to III) of a processing area of the workpiece (20) with local resolution.
38. The device as recited in claim 35, wherein a component decoupling the measuring light and the light radiation is disposed in a beam path of the laser radiation (1).
39. The device as recited in claim 35, wherein said measuring-light source (32 to 34) is disposed inside a processing head comprising said processing optic.
40. The device as recited in claim 38, wherein said measuring-light source (32 to 34) is structurally combined with said decoupling component.
41. The device as recited in claim 36, wherein the measuring light from said measuring-light source (32 to 34) is projected onto the workpiece (20) at an angle with respect to the predefined optical axis (10).

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42. The device as recited in claim 36, wherein the measuring light from said measuring-light source (32 to 34) is projected onto the workpiece (20) as an envelope of a selected one of a cone, and truncated cone, and as straight line segments.
43. The device as recited in claim 36, wherein the measuring light from said measuring-light source (32 to 34) is amplitude-modulated at a fixed frequency.
44. The device as recited in claim 36, wherein the measuring light from said measuring-light source (32 to 34) can be applied to different observation sites of the workpiece (20) in temporal succession with repetition at a high frequency.
45. The device as recited in claim 35, wherein the detector (11) has a dynamic range extending over plural decades of luminous and radiation intensity.
46. The device as recited in claim 37, wherein disposed ahead of the detector (11) is an optical filter system (12) adapted to delimit the observation zones (I, II or III) of the processing area.
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